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DEPARTMENT OF FISHERIES.

The Fisheries Industry of Lake Erie

FOR THE

YEAR ENDING 1903

BY

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DEPARTMENT OF FISHERIES.

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FISH INDUSTRY OF LAKE ERIE.

Among the duties entailed on the Department of Fisheries by the Legislature is one to gather statistics and other information concerning the fisheries interests of the Commonwealth of Pennsylvania, and publish them in bulletins and reports. In obedience to this important and useful mandate, the Commissioner of Fisheries directed Mr. George Hamberger, a regular fish warden located in Erie, to gather all the data possible concerning the fish industry in Lake Erie within the jurisdiction of Pennsylvania.

The results of his work will be found highly instructive and readable. It gives a clear idea of the great value of the fishery industry of Lake Erie within the limits of Pennsylvania, and how important and even necessary it is for the Commonwealth to engage largely in artificial fish culture to keep the Lake well stocked. It requires no extensive figuring to demonstrate the benefit which accrues from the work, nor that the money expended by Pennsylvania in artificial work is well invested.

By Mr. Hamberger's figures it is shown that the fishermen on Lake Erie received about $300,000 for the fish they caught last year and that the catch retailed for nearly $900,000. The expense of operating a hatchery at Erie for the propagation of Lake fishes is only about $3,000 a year, of which about $2,000 is from licenses paid by owners of boats and nets, making the net cost to the State only about $1,000, with the present facilities. The station operated by the Department of Fisheries at Erie is a handsome frame structure resembling in outward form an ornamental cottage. The fish eggs are hatched therein by what is known as the battery system, that is to say, a number of large wooden troughs are placed one above the other from the floor to the ceiling and through them water flows continuously from top to bottom. Large glass jars containing about three gallons of water are placed on platforms on each side of the troughs.

Each jar holds from one hundred to one hundred and fifty thousand eggs according to the species. There are two batteries in the station holding in round numbers over five hundred jars, and the present capacity of the two batteries is more than one hundred millions of fish a year. With some slight changes the capacity could be nearly doubled.

The fish propagated in the batteries are white-fish, pike-perch, lake

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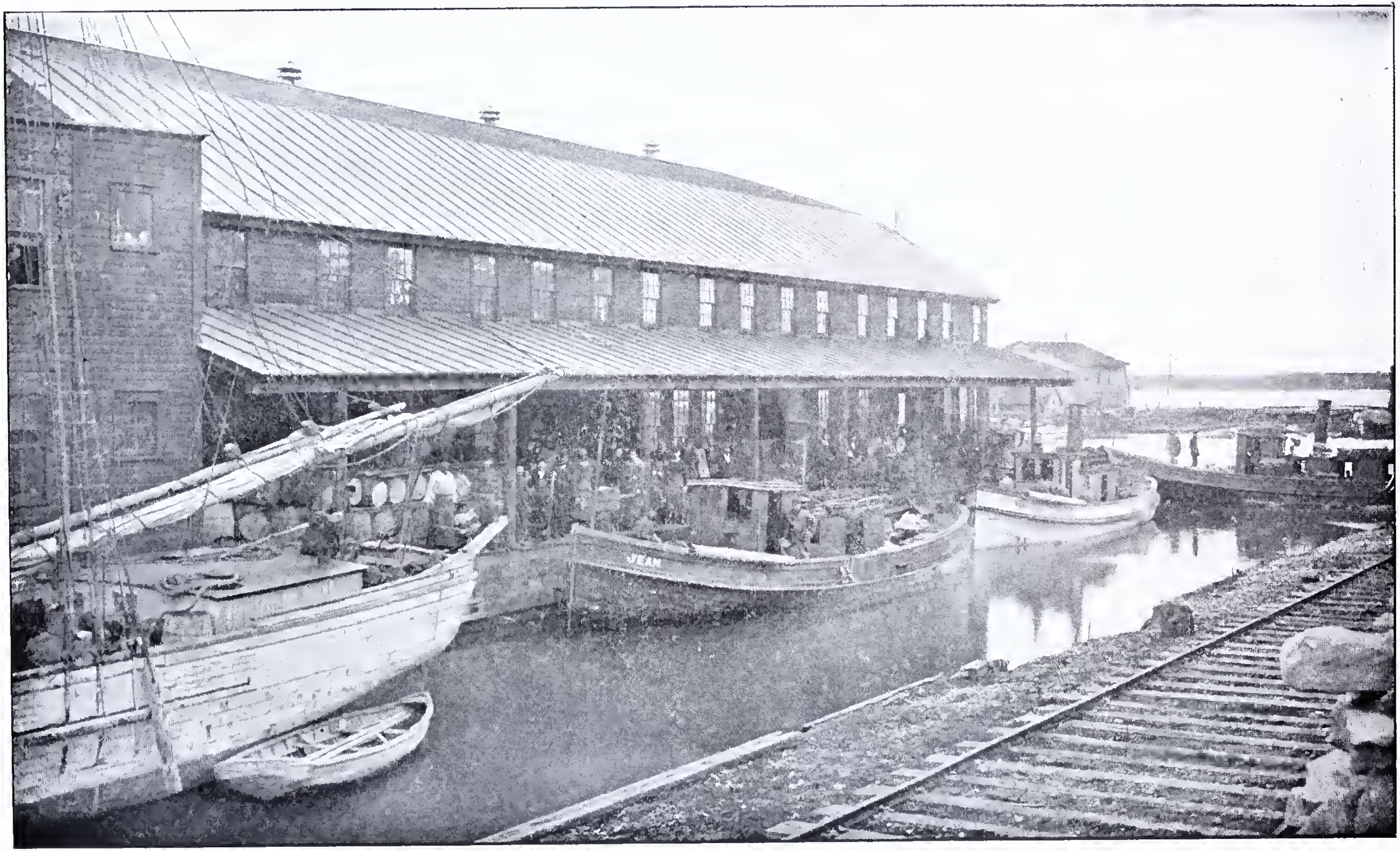
herring, blue pike, and yellow perch. The work of yellow perch hatching is augmented by small ponds on the hatchery ground in which a few sunfish are also propagated. The blue pike eggs, the sunfish eggs and the yellow perch eggs are gathered by the Department from the waters and nets in the vicinity of the city of Erie.

By an arrangement with the United States Bureau of Fisheries the eggs of the white-fish, pike-perch and lake herring are gathered by the former body, Pennsylvania Department of Fisheries paying its pro rata share of the cost. The bulk of the white-fish from which the eggs are taken are kept in pens by the United States Bureau of Fisheries at Put-In-Bay. The pens have to be watched to prevent theft of the fish and the Department of Fisheries pays its pro rata of the expense of the watchmen. Formerly Pennsylvania gathered its own eggs as best it could from Ohio waters, but the method was found both expensive and uncertain. The present arrangement, which was made recently, has been found much more economical and satisfactory to both the United States Bureau of Fisheries and Pennsylvania than the former method.

There are two matters not wholly satisfactory to the Department of Fisheries in connection with the Fish Cultural Work at Erie and which it believes should be corrected. The first and most important is the charge which the city of Erie makes for the water which is used in the hatchery house. As a large portion of the financial returns of the fish industry in Erie directly benefits people in and around the city of Erie, it would seem only just at that municipality should furnish the water without cost. Moreover when the station was first established, in fact before it was established, one of the inducements held out to the Fish Commission and to the Legislature was that the water should be free. For two years that agreement was carried out and then the city of Erie, repudiating its agreement, made a charge of $400 a year, which it has insisted ever since should be paid. The second unsatisfactory matter is the charge which is made for the eggs unless they are actually taken by the Superintendent of the Station or his representatives. Very few of the fishermen will take the eggs and turn them over to the hatchery without being paid, and at the very highest rate, for the eggs.

W. E. MEEHAN,
Commissioner of Fisheries.



A Fish Company's Warehouse at Erie.

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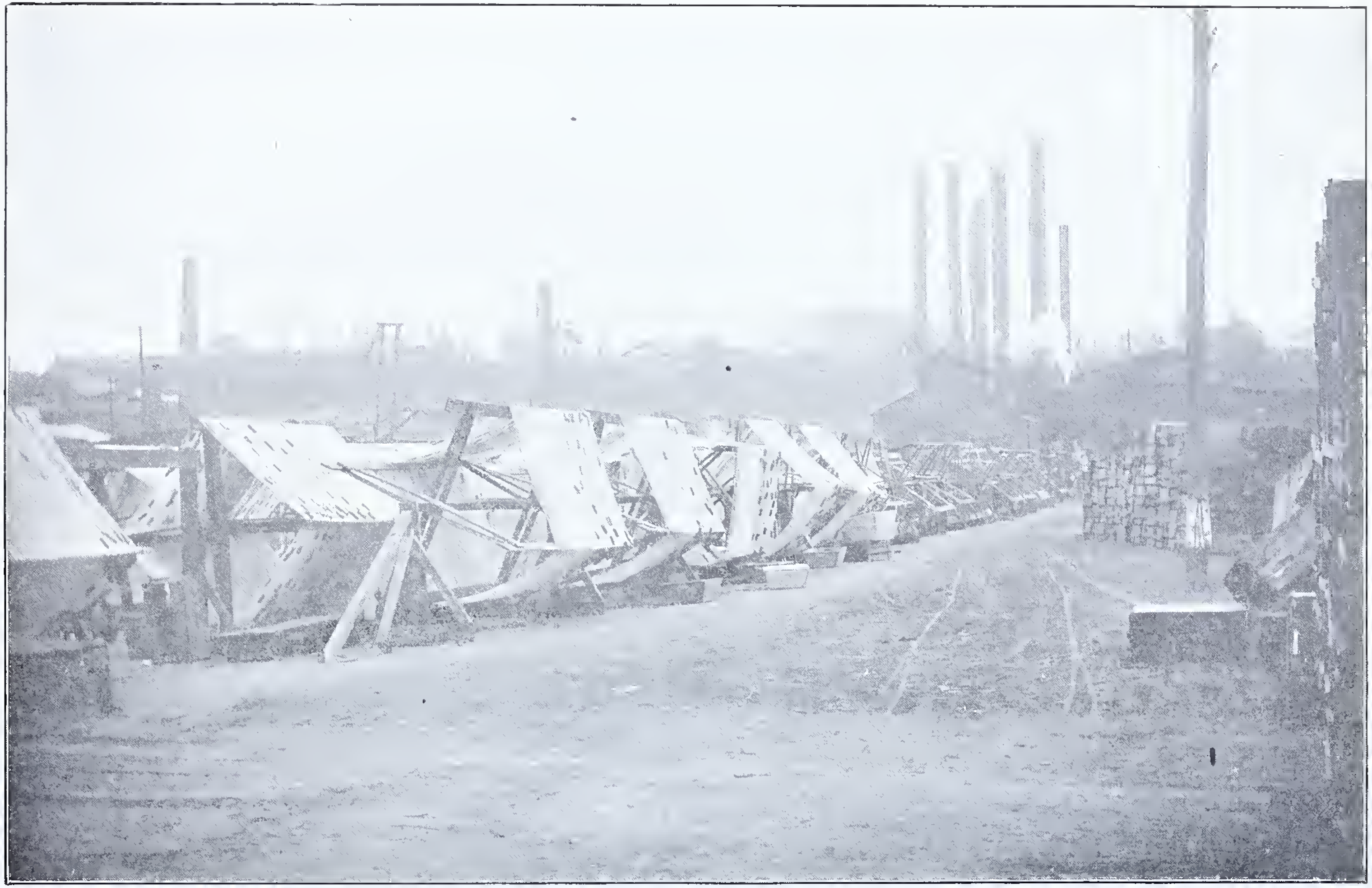

Lake Erie Fishery—The Reels—Some Empty—Some with Nets.

In conformity with orders of the Department of Fisheries, I have gathered all the data possible concerning the fish industry in Lake Erie within the jurisdiction of the Commonwealth of Pennsylvania, for the year ending December 31, 1903.

The total amount of fish caught off Erie and along the Pennsylvania shore of Lake Erie during the year 1903 is as follows:

	Pounds.
Herring,	5,033,000
Blue pike,	1,964,000
White fish,	36,500
Mixed fish,	247,000
Total,	7,280,500

The value of these fish is about $300,000. During the year 1902 the fish caught was about double this amount, due to unfavorable weather conditions in the lake in 1903. The few white fish caught is accounted for, because only a few boats were fishing for them with their big mesh nets. Tugs don't get up white fish (big mesh) nets anymore; and what big mesh nets were around the last two years were mostly used up in fishing for large herring, which the fishermen think is more profitable than to go after white fish exclusively. There is strong evidence that the number of white fish is increasing owing to the work of artificial hatching done by Pennsylvania and the United States. The fishermen all agree that in a few years the white fish will be once more sufficiently plentiful to warrant the use of white fish nets.

In catching the 7,280,500 pounds of fish the following nets and boats were used:

45 pound nets, 72 trap nets, 65 steam tugs with gill nets, 12 sail boats and 6 gasoline boats with gill nets.

The value of these boats is as follows:

65 steam tugs @ $4,000,	$260,000
12 sail boats @ $300,	3,600
6 gasoline boats @ $600,	3,600
83 boats valued at	$267,200

The steam tugs registered at Erie cost all the way from $3,000 to $10,000 each, and there is one fine steel tug that cost $12,000.

The value of the gill nets used by the 83 boats was about $160,000. In their manufacture the fishermen use mostly number 35-2 cord linen, 3⅛ inch mesh (stretched) and 4 inch mesh. There was considerable cotton twine used the last two years, but the fishermen are going back to linen again, as the cotton is not strong enough and wears out too quick, and it is not as nice to handle as linen.

Each boat had about five miles of gill nets in the lake all the time, with about the same amount on the reels to dry. The whole fleet had about 400 miles of gill nets in the Lake all the time. There were about 350 men employed on these boats, and about 100 men in the fish houses, as dressers and packers.

The fish houses here are the following: Keystone Fish Company, A. Booth & Co., Buckeye Fish Co., Ranney Fish Co., Eugene Loesch, Erie Fish Co., and the Union Fish Co. The men employed on the tugs and in the fish houses all belong to organized labor. The captains and engineers belong to the L. T. P. A. (Licensed Tugmen's Protective Association). Their pay for 1903 was $105 a month for captains and $100 a month for engineers. The fishermen belong to the Gill Net Fishermen's Union, and they worked on shares. The owner took the captain's and engineer's share and paid them their respective wages. For instance, if a boat carried a captain, engineer and 4 fishermen, and caught $380 worth of fish in a week, one-half, or $190, was divided into six shares of $31.67 each, then the 4 fishermen would get $31.67 each, the captain $24.50 and the engineer $23.33. leaving the owner the balance of $205.49. But if the boat only caught $100 worth of fish a week, each fisherman would get one-sixth of $50 or $8.33, the captain $24.50 and the engineer $23.33, which would leave the owner $18.85.

Owing to the fact that some of the men on board the boats work the nets on shares, it is difficult to summarize accurately the amount of money paid out last year, as wages or stipends. The wages of the men on the boats aggregated about $150,000. The value of the total catch was $300,000, and, according to the way the fishermen were paid on the share system the crew received about one-half of the value of the whole amount caught.

Now the value of $300,000 for the 7,280,500 pounds of fish caught was based on the price received by the fishermen who own their boats and nets. There are about twenty independent boats that are owned and operated by different fishermen and they sell to the dealers in Erie. This value was also the basis on which the men on shares were paid. It averaged about 4 12-100 cents a pound.

Of course the Erie dealers or wholesalers sold the fish at an advance and the retailers in Pittsburg, Cincinnati, New York, and other places were obliged to sell at a still higher price. The retailers must have sold their stock at least 11 cents a pound, thus when the 7,280,500 pounds of fish reached the consumers the value was about $800,855. It must be remembered that this statement of and the catch and its value applies only to the fish caught from Lake

Erie within the jurisdiction of the Commonwealth of Pennsylvania. When this statement is made some faint idea may be gathered of the great importance of the entire fish industry of Lake Erie.

The dressers in the houses belong to the Fish Dressers' Union, and they received $2.50 a day. The twine is strung by the "Twine Stringers' Union" composed mostly of the wives, daughters and relatives of the fishermen. They get from 30 cents to 50 cents a pound, according to the fineness of the twine strung.

The getting up of the rig of gill nets for a tug is quite interesting and entails a considerable amount of work. First, 300 pounds of twine, 600 pounds of maitre and 150 pounds of seaming twine is bought from one of the factories. This twine, generally comes from Boston, and is mostly No. 35-2 cord linen, 3⅛ inch mesh and 20 meshes deep. This 3⅛ inch mesh will do for blue pike or herring fishing. This twine, maitre and seaming will cost about $800. After it reaches Erie it is taken to the homes of the Twine Stringers' Union. They seam the maitre on both sides of the net, which are called side lines. Places are marked on the side lines for the corks and leads. Each net is made about 300 feet long with the corks and leads 3 feet apart. Each net has 30 corks and 30 leads and each cork is on the side line just opposite the lead on the other side.

After the nets are strung with side lines of maitre they are taken to the tug's shanty and corked and leaded by the crew. For 300 pounds of twine a ton of leads are needed and these will cost about $115. The leads are all marked with the name of the tug stamped on with a steel stamp. The corks are cedar and are made in Michigan. The fishermen oil them with linseed oil, giving them three coats at three different times, and they are generally hung up to dry for a whole year before used. When the nets are corked and leaded they are hung up in the shanty. The leads are nicely laid together in consecutive order and tied up, then laid over planks erected just under the roof of the shanty.

When the tug is ready to start fishing, the crew ships up the nets in boxes about three feet long and two feet wide. One man lays the leads carefully and in consecutive order in one end of the box, and another man lays the corks in the same manner in the other end of the box. Eight nets go in each box. As each net is 300 feet long, there will be 2,400 feet of nets in each box. They will ship up 12 boxes, which will make one gang of nets, and when set in the lake, they will reach the distance of about 5½ miles. In the spring of the year each tug generally has three gangs of nets in the lakes, as the water is cold and it does not rot the nets or rot the fish.

In the spring most of the pike are alive in the nets when they are landed aboard. But in the summer only one gang of nets in the lake is used, as the warm water rots the fish and is bad on the twine. In November and December each boat has two gangs of nets in the lake as the water is cold again.

In the fall the weather is generally bad and two gangs of nets in the lakes is about all a tug can handle.

After the nets are shipped up in boxes the tug goes out to the fishing ground. The captain generally goes in the vicinity where some other tug has already made some good lifts. The crew throws over the buoy.

The buoy consists of a bamboo pole about 20 feet long with a small flag on top. On the bottom of the pole is a weight of iron or lead and about six feet from the bottom of the pole is a round piece of pine about a foot long and eight inches in diameter called a bobber. To the bottom of the pole a rope is attached and at the end of the rope is a stone anchor.

The bobber is on the surface of the lake, and the pole stands upright with the flag flying. The bobber generally has the name of the tug painted on it. To the anchor line is attached a brace which is tied to the bridle of the nets. Then they commence to set the nets. The tug goes along at a fair gait and one man throws out the leads, while another throws out the corks. On each gang of nets there are three or four buoys at equal distances apart.

The next day when the tug goes out, she takes along six boxes of nets (dry). After pulling the 12 boxes and picking out the fish, they rope back six boxes of wet nets and set six boxes of dry nets. The roping is done by one man leaving them out of the box and another man aft spreading them as they go into the water. While on their way to the harbor they wash the other six boxes of wet nets. The washing is done by one man leaving the nets out astern and another pulling them in while the boat is going along. The current through the twine washes it well, taking out the slime, scales and mud very effectively.

When the tug reaches the harbor the fish is unloaded at the company's house, and the vessel is then taken to her own dock where the wet nets are drawn off the reels by the shore boys and are ready to be taken out in the lake again on the following day.

GEORGE HAMBERGER,
Fish Warden.